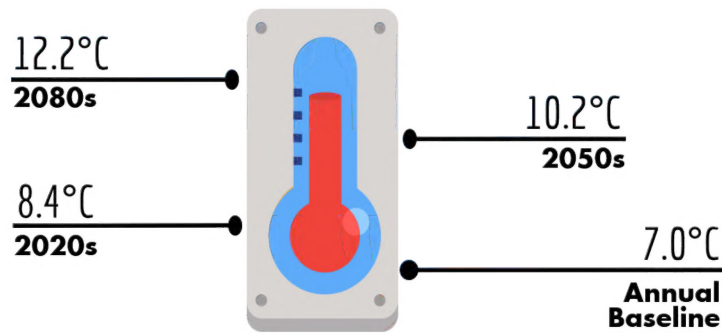


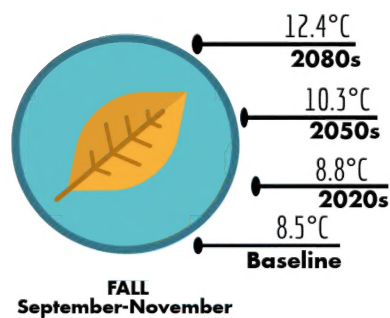
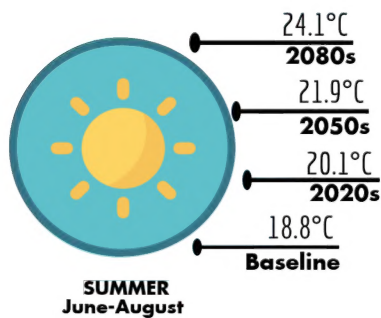
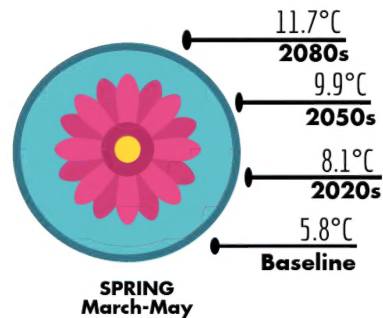
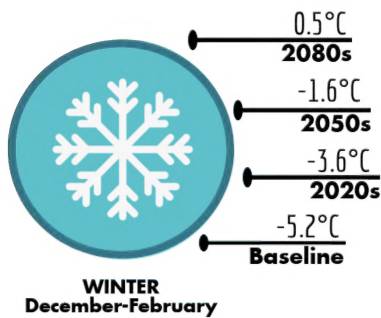
# THE CITY OF WATERLOO FUTURE CLIMATIC PROJECTIONS

April 2018



## ANNUAL MEAN TEMPERATURES

Mean, minimum & maximum daily temperatures are projected to significantly increase in every season.



## SEASONAL MEAN TEMPERATURES

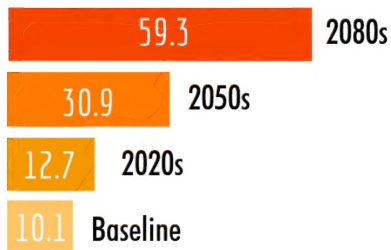
## DAYS WITH FREEZE-THAW CYCLES



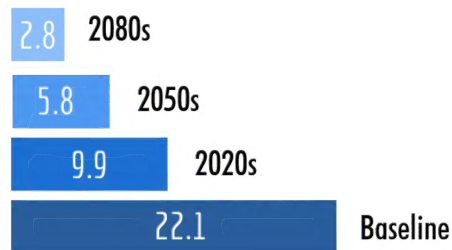
## FREEZE-THAW CYCLES

More freeze-thaw days expected, with an eventual slight decline.

### DAYS ABOVE 30°C

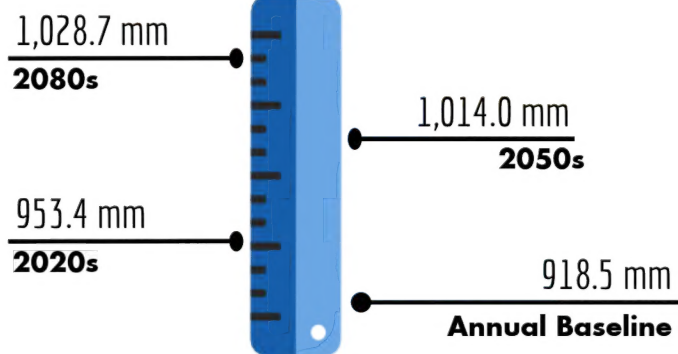


### DAYS BELOW -15°C



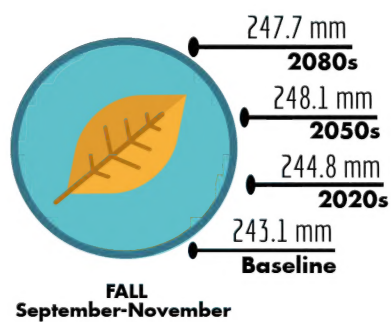
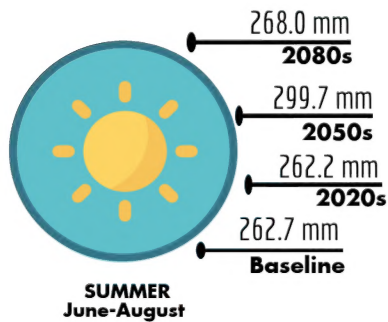
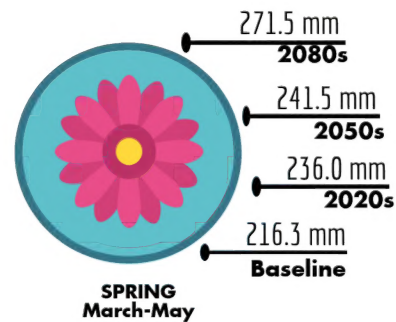
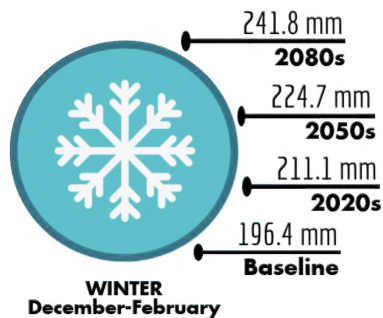
### TEMPERATURE EXTREMES

More hot days,  
fewer cold days.



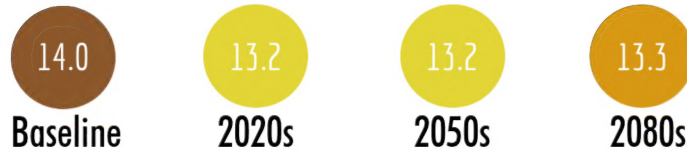
### ANNUAL MEAN PRECIPITATION

Annual precipitation is  
expected to increase.  
Winter, Spring, and  
Summer are projected  
to get significantly  
wetter.



### SEASONAL MEAN PRECIPITATION

## ANNUAL NUMBER OF DRY SPELLS



## DRY SPELLS

Dry spells are defined as periods of 6 or more consecutive days with no precipitation.

Compared to the 2000s historical averages, frequency of wind gusts greater than

**40 km/h**  
are projected to increase by  
**10-20%**



...and wind gusts greater than

**70 km/h**  
are projected to increase by  
**20-40%**

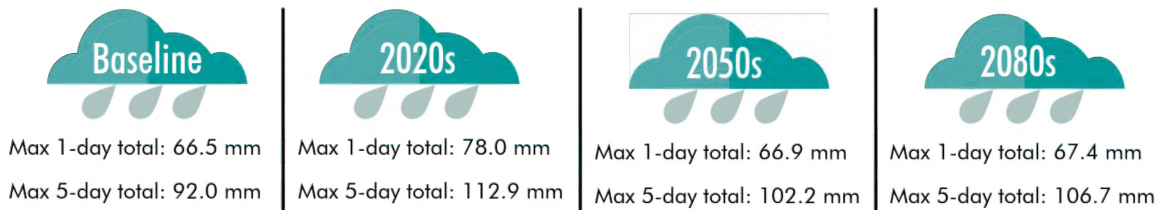
## WIND

Severe wind gust events are expected to increase in both frequency and magnitude by the end of the century.

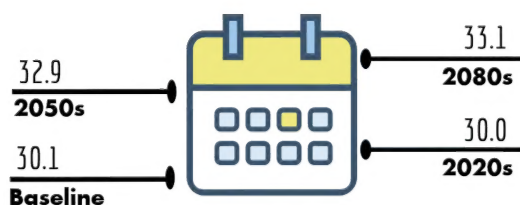
Precipitation events in general are projected to become more intense and extreme.

## PRECIPITATION EVENTS

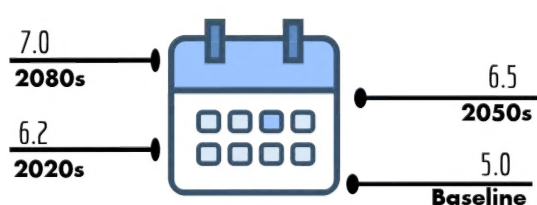
### MAXIMUM TOTAL PRECIPITATION FOR A 5-YEAR RETURN PERIOD



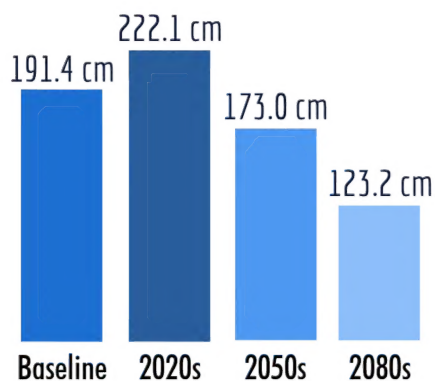
### DAYS WITH PRECIPITATION OVER 10 mm



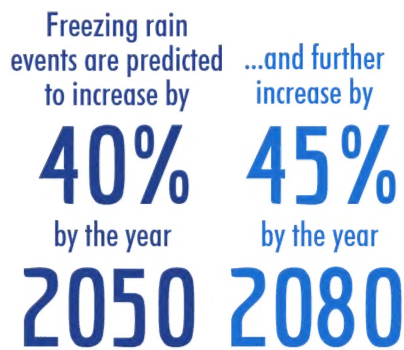
### DAYS WITH PRECIPITATION OVER 25 mm



## ANNUAL MEAN SNOWFALL



## FREEZING RAIN



\* Baseline period: 1990s (1981-2010); Projection periods: 2020s (2011-2040), 2050s (2041-2070), 2080s (2071-2100).

Source:

Interdisciplinary Centre on Climate Change & University of Waterloo (2015). Localized Climate Projections for Waterloo Region.